

REMARKS

Summary Of The Office Action & Formalities

Status of Claims

Claims 1-10 are all the claims pending in the application. By this Amendment, Applicant is adding new claims 11-16. No new matter is added.

Claim to Foreign Priority

Applicant thanks the Examiner for acknowledging the claim to foreign priority.

However, the Examiner is kindly requested to confirm that a copy of the priority document was received from the International Bureau.

Information Disclosure Statement

Applicant also thanks the Examiner for initialing the references listed on form PTO/SB/08 submitted with the Information Disclosure Statement filed on February 1, 2006.

Art Rejections

1. Claims 1, 2, 4, 8 and 10 are rejected under 35 U.S.C. § 102(b) as being anticipated by Garrigou (US 3,625,437).
2. Claims 3, 5-7 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Garrigou (US 3,625,437) in view of Ennis, III (US 4,923,448).

Applicant respectfully traverses.

Claim Rejections - 35 U.S.C. § 102

1. Claims 1, 2, 4, 8 And 10 In View Of Garrigou (US 3,625,437).

In rejecting claims 1, 2, 4, 8 and 10 in view of Garrigou (US 3,625,437), the grounds of rejection state:

In regard to Claims 1, 2, 4, 8 and 10, Garrigou (3,625,437) teaches a fluid spray head manufactured from a common mold where the spray head has an expulsion channel (13) with a spray orifice (14) and a spray profile (15,16,17) where non radial feed channels are formed to the swirling chamber that is disposed upstream of the spray orifice (14) where an insert (9) is disposed in the expulsion channel (13) so as to form a cover for the spray profile (15,16,17) where the central axis of the insert (9) is substantially identical to the central axis of the expulsion channel (13) (Figure 4) and where the expulsion channel (13) further has a centering means (19) for centering the insert (9) within the spray head where the centering means is in close proximity to the spray profile (15,16,17) where accesses of the expulsion channel (13) of the feed channel are formed between the projections (Figure 4). The centering means (19) of Garrigou comprises at least three projections that are inscribed in a circle and have a diameter that is substantially identical to the insert (9) diameter (Figure 4).

Office Action at page 2. Applicant respectfully disagrees.

Claim 1 covers an insert forming an internal nozzle, and, more specifically, means provided by the expulsion channel for centering the nozzle.

Garrigou, on the other hand, does not disclose a spray head comprising an insert forming an internal nozzle. Thus, the problem of centering the insert is not even raised. Contrary to the grounds of rejection, element 9 in Garrigou is not an insert but the flat end surface 9 of a pin 8 extending from the bottom 7 of a recess of the spray head 1. The surface 9 is disposed just upstream from an external nozzle 2 (*see Figs. 1 and 2, Col. 3, ll. 37-40*). This nozzle 2 is introduced, from the exterior of the spray head, into the recess 6, tightly encircling the pin 8. In

the device of Garrigou, there is no centering means provided in that recess (expulsion channel) for centering the nozzle.

Consequently, claims 1, 2, 4, 8 and 10 are not anticipated by this patent and the Examiner is kindly requested to reconsider and withdraw the rejection of these claims.

Claim Rejections - 35 U.S.C. § 103

1. Claims 3, 5-7 And 9 Over Garrigou (US 3,625,437) In View Of Ennis, III (US 4,923,448).

In rejecting claims 3, 5-7 and 9 over Garrigou (US 3,625,437) in view of Ennis, III (US 4,923,448), the grounds of rejection state:

In regard to claim 3, Garrigou as taught above discloses and teaches the claimed invention except for the expulsion channel (13) having three flat surfaces that are symmetrically arranged about the expulsion channel (13) where the flat surfaces cooperate with the insert (9) to center the insert (9) relative to the expulsion channel (13). Ennis, III (4,923,448) teaches that it is known to have an expulsion channel (52) that includes at least 3 flat surfaces (64) that are symmetrically placed about the expulsion channel (13). It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the flat surfaces (64) of the expulsion channel (52) as taught by Ennis, III to the expulsion channel (13) of Garrigou , in order to provide for a non cylindrical means for centering the insert (9) about the expulsion channel (13) so as to offer better tolerance control in offsetting the insert from the expulsion channel.

In regard to claims 5-7 and 9, Garrigou as taught above discloses the claimed invention except for the following: a central axis of the insert (9) being offset from the central axis of the expulsion channel (13) by a distance of less than 0.08 mm, and preferably less than 0.03 mm; a spray chamber having a diameter of 1 mm; a spray orifice having a diameter of 0.3 mm; and the standard deviation of the offset between the central axis of the insert relative to the central axis of the expulsion channel being less than 0.05 mm and preferably less than 0.02 mm. It would have been an obvious matter of design choice to offset the central axis of the insert (9) from the central axis of the expulsion channel

(13) by a distance of less than 0.08 mm, and preferably less than 0.03 mm as applicant has not disclosed that offsetting the central axis of the insert (9) from the central axis of the expulsion channel (13) by a distance of less than 0.08 mm, and preferably less than 0.03 mm solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the central axis' not being offset from one another.

It would have also been an obvious matter of design choice to provide for a spray chamber having a diameter of 1 mm and a spray orifice having a diameter of 0.3 mm as providing for such dimensions of the spray chamber and spray orifice as claimed are not disclosed by applicant so as to solve any stated problem or is for any particular purpose and appear that the invention would perform equally well if the dimensions of the spray chamber of 1 mm and the spray orifice of 0.3 mm were larger.

It would have been a further obvious matter of design choice to provide for a standard deviation of less than 0.05 mm and preferably less than 0.02 mm for the offset between the central axis of the insert relative to the central axis of the expulsion channel since applicant has not disclosed that providing for a standard deviation of less than 0.05 mm and preferably less than 0.02 mm for the offset between the central axis of the insert relative to the central axis of the expulsion channel solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well without an offset between the insert and expulsion channel.

Office Action at pages 3-5. Applicant respectfully traverses.

An objective of Applicant's invention is to have a spray head with a nozzle that cannot be expelled during use, that has fluid spray characteristics that are consistent and reproducible, and that is simple to manufacture.

Garrigou discloses an external nozzle 2 and, therefore, does not provide any teaching or suggestion for avoiding the risk of the spraying nozzle being expelled during use.

Ennis III describes a syringe with a tubular nozzle 22 (expulsion channel). In this expulsion channel, there is a short fixed, axial, cylindrical stem 36, which may be integral and extends forwardly from the center of four radial spider arms 40 extending from the internal wall of the expulsion channel 22 (*see Fig. 8*). An external spraying nozzle is pushed in the open-end of the expulsion channel 22.

The channel 22 does not have any means for centering this spray nozzle nor its spray orifice, as this nozzle is only held in the expulsion channel by firm contact with the inner side of the channel (*see Fig. 3*).

The three flat surfaces 64 being referred to by the Examiner are internal projections extending from the spraying nozzle 50 and do not form the expulsion channel 22. These flat surfaces 64 (as well as the spraying nozzle 50) are made of a flexible plastic material. They are not provided for centering the stem 36 with respect to the expulsion channel 22, but only provide a tight holding of the end of the stem 36, thereby defining passages to pass the liquid and to produce an atomized spray.

Indeed, the only centering mechanism mentioned in Ennis III includes the four radial spider arms supporting the stem. But contrary to the present invention, they are not formed in the proximity of the spray profile (*see col. 3, l. 43*).

Consequently, the spraying device of Ennis III does not guarantee consistent and reproducible fluid spray characteristics. The problem of avoiding the risk of the spraying nozzle being expelled during use is also not raised in this document. On the contrary, the ease in which

the nozzle tip 50 can be removed is described: by insertion of a stiff wire from the open end of the barrel of the syringe (*see col. 3, ll. 28-33*), in order to reuse the nozzle.

In summary, the devices disclosed in Garrigou et al. and Ennis III differ substantially from the spray head of present invention. First, these patents do not raise any of the problems that the present invention solves. Second, the alleged combination of the two patents is not obvious and requires many adaptations. Moreover, as both patents disclose an external spray nozzle, such a combination would not lead to a spray head as recited in present claim 1 (*i.e.*, an internal spray nozzle). Third, these patents do not provide any indication to one having ordinary skill in the art at the time the invention was made to achieve the present claimed solution comprising an internal centered nozzle.

Consequently, claims 3, 5-7 and 9 are allowable for the foregoing reasons as well as by reason of their respective dependencies.

New Claims

For additional claim coverage merited by the scope of the invention, Applicant is adding new claims 11-16, which are allowable at least because they recite an internal nozzle with a projection for aligning an insert.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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